

## Bridge Program Purpose and Performance Measures

The function of the Bridge Program is to preserve the structural integrity of all bridges that the Department of Transportation and Engineering (DOTE) maintains. DOTE established the following performance measures to track progress towards accomplishing this objective.

1. Bridge Program personnel will annually inspect all bridges on, over, or under public streets within the City of Cincinnati (excluding Interstate Bridges), in compliance with the Ohio Revised Code, Section 723.54.
2. Bridge Program personnel will develop, request funding, program, and manage bridge maintenance, repair, and replacement work so as to maintain a Weighted Average Bridge Rating of 6 or better for bridges maintained by the Department of Transportation and Engineering. A bridge rating of 6 represents a "Satisfactory" condition.

Both of these performance measures were achieved again this year. During the 2004/2005 bridge inspection season, DOTE personnel inspected all **292** bridges requiring inspection. The City (DOTE) Bridges weighted average is **7.18** and the County Bridges weighted average is **6.53**.

### What is a "Weighted Average Bridge Rating"?

The Weighted Average Bridge Rating is a calculated value used to monitor the performance and communicate the effectiveness of the Bridge Program. The Weighted Average Bridge Rating is an adjusted average of the overall bridge condition ratings that accounts for the importance of the bridge as determined by its size. The weighted average is calculated using a size factor based on the deck area of the bridge as follows:

Size Factor	Deck Area (Square Feet)
1	under 5,000
2	5,000 to 10,000
3	10,000 to 20,000
4	20,000 to 40,000
5	over 40,000

By using the size factor, a bridge with a deck area of over 40,000 square feet will have five times the effect on the weighted average than a bridge with a deck area of under 5,000 square feet. Therefore, the Weighted Average Bridge Rating will be affected more by larger bridges, which are typically more vital to the public and require more funds for maintenance, repair, and replacement.

## **Record of Program Achievement**

The condition of both City (DOTE) bridges and County bridges has shown general improvement over the last seventeen years. The current weighted average bridge rating for City (DOTE) bridges is 7.18. This is the thirteenth consecutive year that the Weighted Average Bridge Rating for City (DOTE) bridges was greater than 6. The current Weighted Average Bridge Rating for County bridges within the city limits is 6.53. This is the twelfth consecutive year that the Weighted Average Bridge Rating for County bridges was greater than 6.

## **Change in Average Bridge Conditions Over the Past Year**

The slight decrease in the City (DOTE) bridge rating that occurred this year (from a weighted average of 7.23 to 7.18) was the cumulative result of the following changes:

- 1) The down-rating of Freeman Avenue Bridge over the Sixth Street Expressway (from a 7 to a 4) because fatigue cracks were discovered at some weld locations. Repairs are scheduled for the Fall of 2006.
- 2) The addition of the new Walnut Street Bridge over Parking Garage to the inventory (rating of 9) because bridge construction was completed during the past year.
- 3) The addition of the new Sonoma Court Culvert to the inventory (rating of 9) because culvert construction was completed during the past year.

The slight increase in the County Bridge rating that occurred this year (from a weighted average of 6.51 to 6.53) was the cumulative result of the following changes:

- 1) The down-rating of the Sixth Street Expressway Bridges (east bound and westbound) over Harriet Street (from 7's to 4's) because fatigue cracks were discovered at some weld locations. Repairs are scheduled for Fall of 2006.
- 2) The down-rating of the Marburg Avenue Bridge over N & W Railroad (from a 5 to a 4) due to further age-related deterioration.
- 3) The down-rating of the East Fork Avenue Bridge over Little Duck Creek (from a 6 to a 5) due to further age-related deterioration.
- 4) The down-rating of the Sixth Street Expressway Bridge (eastbound) over Gest Street (from a 7 to a 6) due to the discovery of a fatigue crack in one of the beams. Repairs are scheduled for Fall of 2006.
- 5) The completion of the replacement of the Columbia Parkway Bridge West of Martin Drive and the re-inventorying of the approach structure as a separate bridge (to agree with ODOT's inventory of the bridges) which replaced a single bridge in serious condition (rating of 3) with a new bridge and a newly rehabilitated bridge both in very good condition (ratings of 8).